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lished by the Carnegie Institution of Washington | June, 1907.

This paper presents rather an imposing appearance to have been based on such meager data. Lists of Amphibians, (2), Reptiles (5), Birds (130) and Mammals (5), are given, and yet only 75 specimens of all the vertebrates together are stated to have been obtained; and the author was evidently quite unfamiliar with the biota of the region. It is no wonder that nearly half the species are more or less in doubt. Dr. C. W. Richmond deserves the credit for naming the bird-skins, which were submitted to him for determination. One bird, *Olbiorchilus fumigatus idius* is described by him as new. The six colored plates are by J. L. Ridgway.—J. G.

BIRDS OF LABRADOR, by CHARLES W. TOWNSEND, M. D., and GLOVER M. ALLEN [=Proc. Boston Soc. Nat. Hist. Vol. 33, No. 7, pp. 277-428, pl. 29; July, 1907].

This is a review of our knowledge of the ornithology of Labrador, based upon all previously published accounts together with some new matter resulting from a visit by the authors in 1906. An extensively annotated list shows that 259 species have been accredited to Labrador. Of these, 213 are authenticated species, 2 are extinct, and 44 doubtful or erroneous. The historical phase of the subject is accorded detailed attention, and we are given most interesting quotations from the records of the early explorers. The authors also discuss the "Faunal Areas" of the region. The Arctic, Hudsonian and Canadian life zones are found to be represented. The entire paper shows the results of skilled and conscientious investigation and raises the standard which faunal papers of the future will be expected to reach.—J. G.

EIGHTEEN NEW SPECIES AND ONE NEW GENUS OF BIRDS FROM EASTERN ASIA AND THE ALEUTIAN ISLANDS, by AUSTIN H. CLARK [=Proc. U. S. Nat. Mus. Vol. XXXII, pp. 467-475; June 15, 1907].

This paper includes the description of a new Rock Ptarmigan, from Adak Island, one of the central links in the Aleutian Chain. The bird is called *Lagopus rupestris chamberlaini*, and is characterized [in nuptial plumage of male] as being the grayest and one of the lightest of the Aleutian insular forms of the Rock Ptarmigan.—J. G.

THE BIRDS OF IOWA, by RUDOLPH M. ANDERSON [=Proceedings of the Davenport Academy of Sciences Vol. XI, pages 125-417, 1 map; March, 1907].

Anderson's "The Birds of Iowa" is an admirable paper thruout, the best gotten up state list that has come to our notice. It has the stamp of scholarly workmanship. There is

evidence of long-continued research into the literature of the State, and careful attention to detail. The typography is excellent. Iowa ornithologists are to be congratulated upon so satisfactory an exposition of their avifauna.—J. G.

A PRELIMINARY CATALOG | OF THE | BIRDS OF MISSOURI | by | OTTO WIDMANN | St. Louis, Mo. | 1907 [our copy received Dec. 7, 1907]. Pp. 1-288.

While the word "preliminary" occurs in the title, this book is really an exhaustive treatise on the subject of the distribution and migration of Missouri birds. It seems to be an implied intention on the part of the author to publish later a report covering the life histories of the birds of the region, and if this is carried out with the same fidelity as the present "preliminary" report, we will have access to an ideal compendium of Missouri ornithology.

The present Catalog contains 383 species, of which 162 are breeders. Of the 383, 30 have not been actually taken within the State, thus leaving 353 fully authenticated species. Each species is annotated with localities and dates of occurrence, and with the rarer species the notes are given in detail.

Preceding the Catalog proper is an Introduction followed by a Bibliography, Explanations (of terms employed and method of treatment), and discussions of Faunal Areas, The Climate, Topography, Decrease of Birds and Bird Protection. Each of these topics is handled in a clear, concise manner, giving one the impression that the writer has thoroly studied his subject before attempting to publish upon it. The latter, it may be remarked, is not an overly common thing in American ornithology in the present age. Mr. Widmann is only now beginning to give us the general results of his twenty years of study upon Missouri birds, and we therefore look up to him as being in a position to handle his subject authoritatively.—J. G.

Volume III of THE WARBLER, published by MR. JOHN LEWIS CHILDS, came to hand in November. It consists of 56 pages, besides a colored frontispiece. There are six half-tones of nests and eggs. Two of these show eggs of the Harlan Hawk taken in Iowa. The excellent colored plate and brief accompanying note pertain to the eggs of the Santa Catalina Partridge (*Lophortyx catalinensis*). P. B. Peabody follows with two illustrated articles on "The Breeding of the Arctic Towhee" and "Rock Wren the Cliff Dweller." J. W. Clayton furnishes "Field Notes from the Upper Penobscot, Maine." Two essays by John Bachman, written fully 65 years ago, one of which is printed here for the first time, show some decidedly good field observations on the habits of Vul-

tures and the migration of birds in general. Charles R. Keyes tells of the "Breeding of Harlan's Hawk in Iowa." Mr. Childs recounts some "Long Island Bird Notes for 1907." And the same author publishes extracts from an old manuscript consisting of "A Marvelous Collection of Unpublished Bird Songs." The one on the Bobolink, however, has long been a favorite selection for recitation. It was published in the *Century Magazine* about 1890. The Volume closes with a brief account of "The Childs' Library of North American Ornithology. We judge this to be now the finest private bird library extant.--J. G.

THE DEVELOPMENT OF NESTLING FEATHERS, by LYNDS JONES (=Laboratory Bulletin No. 13, Oberlin College; Oberlin, Ohio; 1907. [November]; pp. 1-18, pll. I-VIII [=142 figg.]).

According to Mr. Jones' statement the purpose of this paper is to 'give a more complete account of the development of down,' and to do away with any conception which may be held at present that the down is a structure distinct from the first definitive feather. While admitting that a continuity between the two has been recognized, he maintains that the down feather is not, as considered by most writers, a relatively separate and distinct feather, but is simply the distal end of the first definitive feather.

The first part of the paper is given over to a discussion of materials and methods. The author then goes on to trace the histological development of nestling down, which differs to some extent from that of the definitive feather. For example, the epitrichial layer of the skin forms the sheath of the down, but takes no part whatever in the formation of the first definitive feather. The development of the barbs and barbules in the down is essentially the same as in the first definite feather, tho as Mr. Jones points out the developing down fundamant has fewer ridges and a shorter diameter than the developing definite feather fundamant, and the down barbules are never provided with hooked barbicels. Further, he finds no chief ridges in the developing down, whereas in the definitive feather they mark the place where the shaft will later be developed. Barbules, however, are found on all down barbs except on certain spike-like feathers from the cuckoo. In the developing down feather the ridges extend from their proximal beginning the full length of the down, while in the definitive feather each ridge extends from its proximal insertion on the developing rhachis only a part of the way to the distal end of the feather germ. This is one of the main distinctions between the down and the definitive feather.

In the latter part of the article the relation of the down to the first definitive feather is taken up more in detail, and several series of cross-sections are figured to show the manner of

passing of the so-called down barb-vanes (the barb with its barbules) into the definitive barb-vanes. In most birds the down barb-vane passes directly into one or more definitive barb-vanes. Occasionally in the true down of certain altricial birds a "quill" is formed, but the author asserts that this is due more to reduced blood-supply and the drying influence of the air than to any innate tendency to form a true quill, and that it may often be split up if pressed between two hard surfaces.

Mr. Jones asserts that the first feather to appear in the ducks is made up of the true first down plus the first definitive feather. He thus very cleverly advances this instance as an example of the primitive relation between the down feather and the first definitive feather.

Altho the paper presents the facts of the case in a new light, it does not seem to a superficial observer that the proposition that the down is not a relatively separate feather is proved. The growth of the down and the succeeding definitive feather has always been considered to be continuous. Dr. Dwight, in speaking of down, says, "It is last seen as waving filaments at the apices of the feathers which succeed it." Mr. Jones in the present paper shows a large series of photographs of first definitive feathers bearing down filaments at their tips. Students of feathers have always recognized the fact that the down is borne directly at the end of the first definitive feather, and yet have considered the down a relatively separate feather. The down feather, and all the definitive feathers succeeding it, grow from the same papilla. Referring to the second crop of definitive feathers (the first winter plumage) Dr. Dwight remarks that a feather of the juvenal plumage may occasionally be found borne at the end of a feather of this dress! It would appear to be just as true, then, that morphologically the first definitive feather is the distal end of the second definitive feather as it is that the down is the distal end of the first definitive feather. The fact that the ecdysis may be discontinuous between the first and second definitive feathers alters the case morphologically not a whit.

In support of his point that the first feather of ducks represents a combination of the down and first definitive feather of other birds Mr. Jones says that its stages of development and growth cover the period commonly taken by the development of both the down and first feather in other birds. The question of time proves nothing, however. The conception as commonly held that the first feather is the *down*, and that the second feather is the first definitive, seems to be more in accordance with the facts. The first feather is modified as a covering for the young. In most birds no thick covering is necessary, but in ducks, which need such a covering a down feather with a shaft is developed. Again, why should the structure and development of Anserine first feathers be regarded as indicating the primitive structure and mode of differentiation of any typical first feather rather than the structure and development of, say Passerine first feathers? Both have in all probability diverged widely from the primitive common type, and now each is highly specialized to serve its own